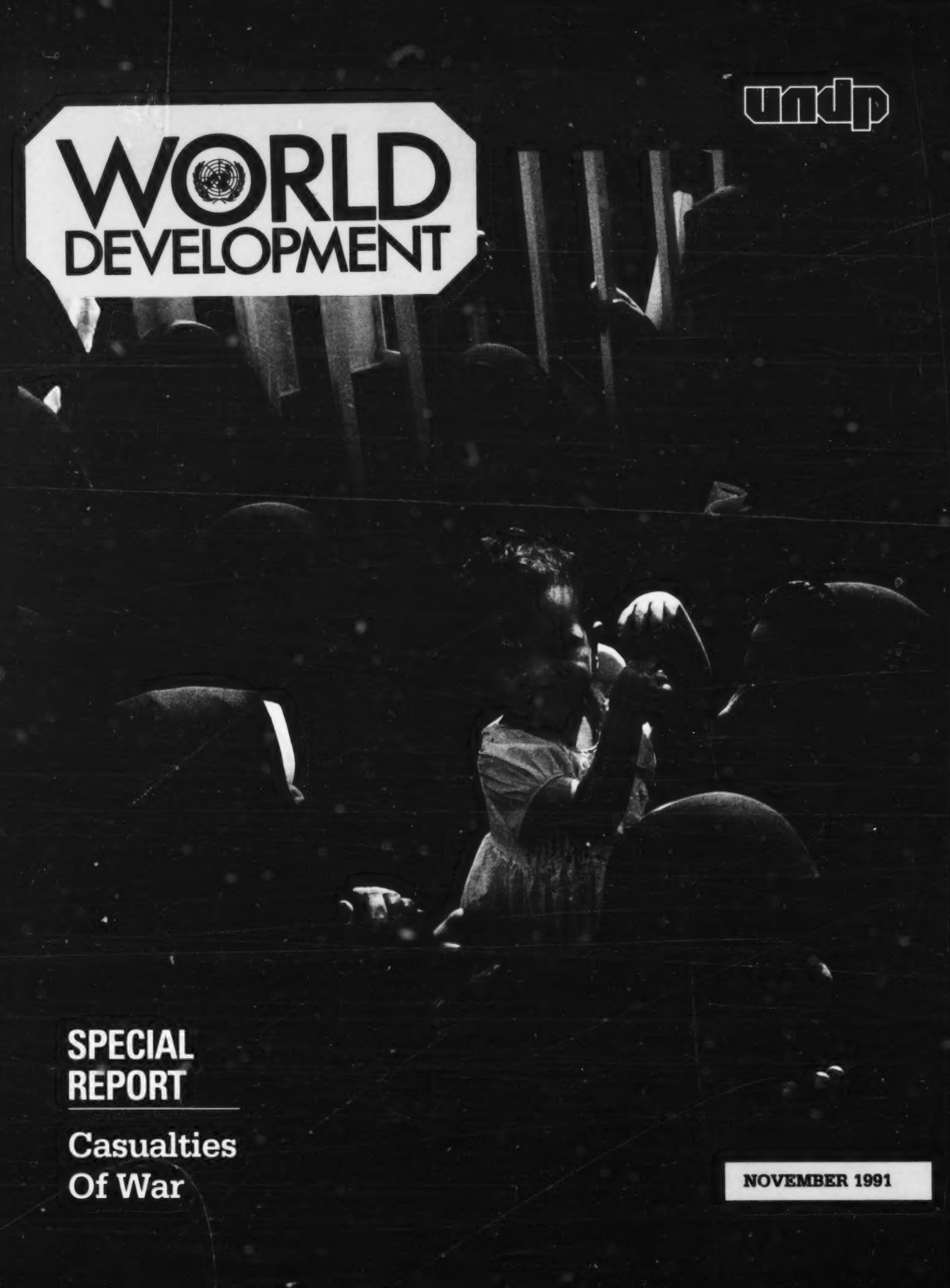

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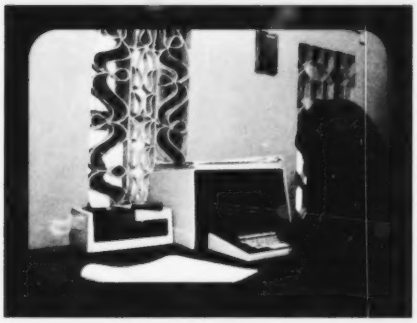

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WORLD DEVELOPMENT

SPECIAL REPORT

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Iraqi women gather for food rations. Cover photo by John Isaac / UN.

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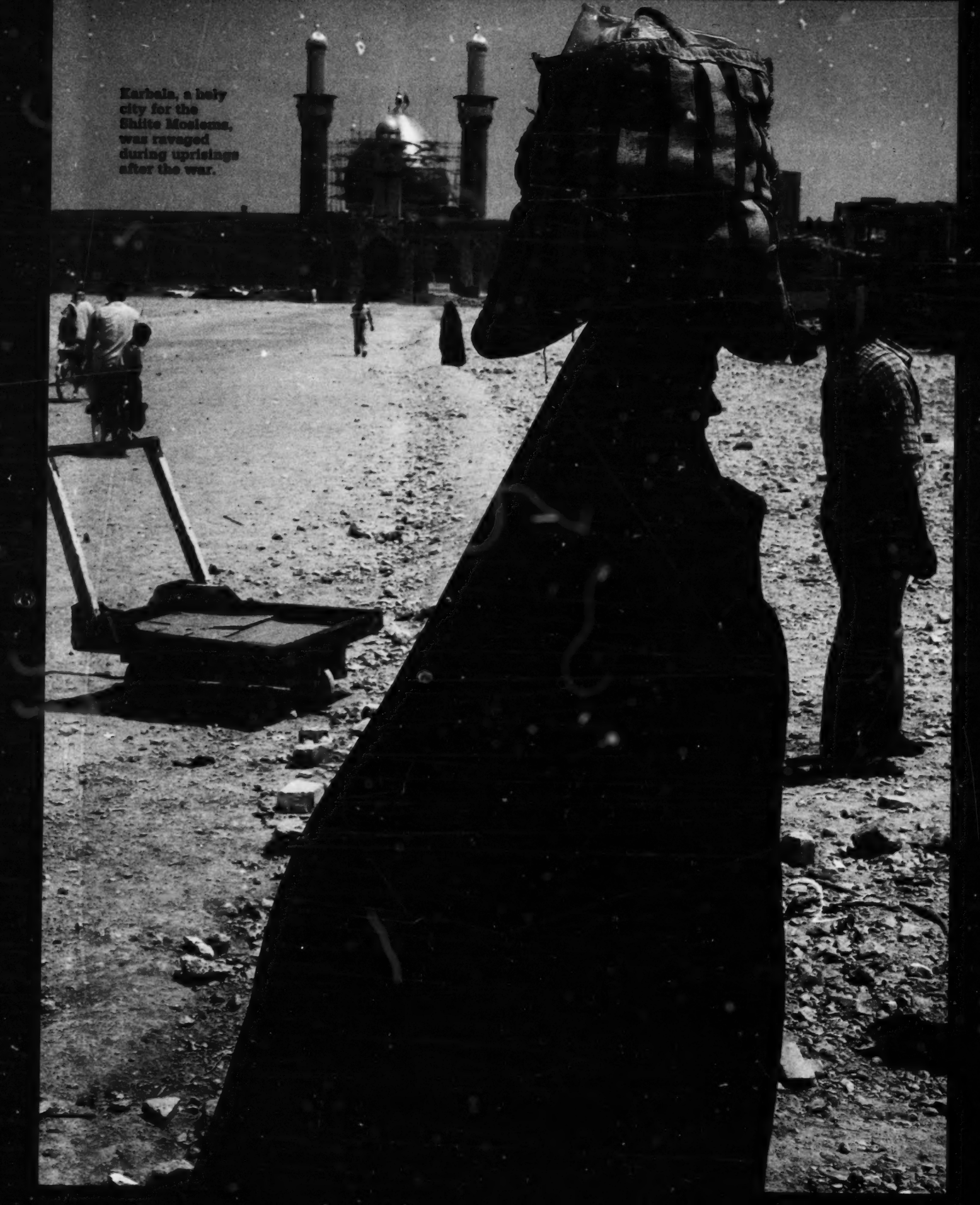


Karbala, a holy city for the Shiite Moslems, was ravaged during uprisings after the war.

INSIDE IRAQ: THE WAR GOES ON

By Lois Jensen

Habbaniyah, Iraq, 18 July 1991 — From the air, all that is visible is a flat expanse of desert, textured by sand-coloured bunkers, and the emerald waters of the Euphrates River. As the chartered Romanian airplane touches down at a military base about 100 kilometres west of Baghdad, the gusts of hot wind become intense.

The plane, originating in Geneva, has been given special landing rights in a country where air travel is still forbidden. It carries more than 40 passengers. There are UN security guards and a German lawyer working on repatriation issues of refugees. There are volunteer doctors and experts who will work out the sensitive details of returning looted property to Kuwait. Many have been given only a few days' notice to join the more than 500-person team in Iraq performing various postwar functions under the United Nations flag.

Driving from the military runway into downtown Baghdad, the scene becomes a cosmopolitan Arab city, temporarily sedated by the late afternoon heat. The futuristic architecture is covered in layers of fine sand. The group drives past the wreckage of what the Iraqis say was once an infant formula factory, buttressed on two sides by buildings that appear untouched. Further along is the towering Al-Rasheed Hotel, imprinted in the minds of television viewers around the world as the home of the CNN crew covering the war from Baghdad. Climbing from the bus at another of the city's ultra-modern hotels, the group is confronted by dozens of reporters and TV cameramen. They've mistaken us for a UN team investigating what's left of Iraq's weapons of destruction.

◆◆◆

Baghdad, 19 July. There is a peculiar glazed look in the eyes of foreigners who have spent time in Iraq. It says that they are resigned to stay and to do their job even while knowing that the unexpected may happen at any moment. At a 7:45 a.m. coordination meeting of the UN humanitarian programme, many of the usual team arrive late. Fighting had broken out the previous night in Sulaymaniyah and several other northern Kurdish towns. The chief of the UN guards, along with the acting head of the coordination unit, had been awake most of the night, in contact by short-wave radio with security staff and other personnel working in Iraqi Kurdistan.

Several hundred people had been wounded and up to 2,000 Iraqi soldiers taken prisoner. Kurdish fighters, or Pesh Merga as they are called, had taken control of Sulaymaniyah. But that had not stopped the repeat exodus of thousands of Kurds to the border with Iran. Although more than 100 UN staff are stationed in and around the city, none had been hurt, and the situation was reported as calm.

The morning's news — sketchy though it is — launches a heated discussion about the safety of UN staff and other international relief workers, and the need to pin down a country-wide security plan in the event of evacuation.

Lois Jensen / UNDP

Naeema Abbas keeps watch over her sick grandson.

© LIV Communications / Morges / CH

◆◆◆

Al Amarah, 22 July. The faint odour of sour milk permeates the pediatrics ward of the Saddam General Hospital in Al Amarah, in a predominantly Shiite Moslem region of southern Iraq. Naeema Abbas, 45, hunches over her one-and-a-half-month-old grandson, who has just been hooked up to an intravenous feeding tube. She watches intently for signs of a response. "He has been sick for 10 days with diarrhoea," she says, directing our gaze to his emaciated young body. "But he hasn't been right from the day he was born."

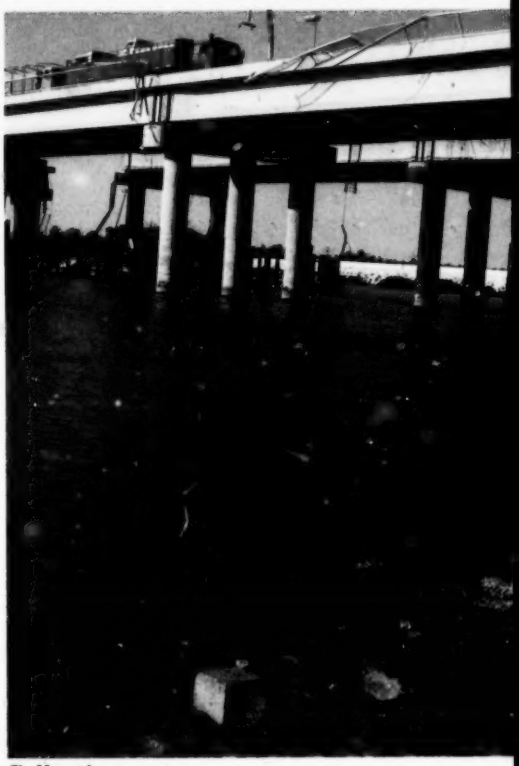
The effects of diarrhoea, caused by unsafe water and compounded by malnutrition, are deadly new problems for children in Iraq. Prior to the war, the country had public health standards comparable to those of some European countries, and most of Iraq's 18 million people had easy access to medical care. Malnutrition was rare and clean water almost universal.

Today, the rate of infant and child deaths in Iraq has doubled, says an independent study team from Harvard University, and new diseases, such as typhoid and cholera, have reached epidemic proportions. The result is that more than 170,000 children are likely to die over the coming year from the cumulative effects of the crisis, which include not only the war itself, but the ensuing civil conflicts in both the north and south, and over a year of economic sanctions.

The extent of the destruction and its impact on the Iraqi population has been meticulously documented in a series of UN reports. One report, dated 15 July, recommends that, under careful UN monitoring, the country be allowed to sell some of its oil to import food, drugs and equipment to get its basic services running again. "We are neither crying wolf nor playing politics," writes

Photos by Lois Jensen / UNDP

Bombed power station in Al Basrah.



Collecting water in Al Basrah from Iraq's most polluted river.

Sadruddin Aga Khan, the executive delegate of the UN Secretary-General, in a foreword to the report. "But it is evident that for large numbers of the people in Iraq, every passing month brings closer the brink of calamity."

The paralysis of Iraq's infrastructure started within hours of the allied air strike in January, which almost completely knocked out the country's electrical power and communications capacity. At the same time, water and sanitation services, which rely on electric pumps, came to a halt. Even in Baghdad, visitors tell of people combing the streets in search of cooking fuel, and collecting water from the Tigris River, into which tonnes of untreated sewage were being poured. Today, nearly 40 per cent of the power supply has been restored, along with some other services. But UN experts say that it is only a matter of time before the lack of maintenance and shortage of spare parts will cause the system to break down again. They also say that full restoration of Iraq's power capacity will cost at least US$12 billion.

Economic sanctions, in addition to the freezing of Iraqi assets abroad, have had an insidious effect on the public at large. Food and drugs are exempt from sanction restrictions, but the Iraqi government claims that it cannot afford them because it is now strapped for cash. Imported food items are plentiful due to widespread smuggling, but prices have skyrocketed, keeping all but the wealthiest Iraqis hungry. While the average salary is about 120 dinars a month, a can of infant formula, lasting three days, is selling for 15 dinars on the black market — $45 at the official rate of exchange. One chicken or a kilogramme of meat costs slightly more. Government-subsidized rations are providing only one-quarter to one-third of a family's food requirements.

Iraqis with special needs are also in serious trouble. Prior to the embargo, Iraq imported $360 million worth of drugs and medical appliances a year. Today, persons suffering from cancer or heart disease, for example, have little chance of receiving appropriate medication or adequate care. The shortage of nitrous oxide means that some emergency surgical procedures are being performed without anaesthesia.

"We do not yet know what the repercussions will be from all that has taken place here," says Seif Eldin Abbaro, deputy resident representative of the United Nations Development Programme (UNDP) in Iraq. "We are still recovering from the shock — the United Nations, the Arab region and the international community. Military operations have ceased, but the war is still on."

◆◆◆

Internal memo of a UNHCR (UN High Commissioner for Refugees) field officer describing the situation in the Sayid Sadiq camp, in Iraqi Kurdistan:

"Intense fighting on 18 July forced us to evacuate the team to Panjwin. It broke our hearts to leave these people that were on the move again. Always coming and going. The most bizarre thing is that life so rapidly comes back to normal. One Kurd said to me as he shrugged his shoulders and smiled, 'Always this fighting!' Team morale is very good under the circumstances. Everybody is determined to get back to work even if it means in some ways starting from scratch."

On 18 April, following the cease-fire and the flight of close to two million Kurds to the borders of Turkey and Iran, a Memorandum of Understanding was signed between the Government of Iraq and the executive delegate of the UN Secretary-General. The ground rules were laid for supplying free food and medicine to displaced and vulnerable populations in Iraq, Kuwait and the border areas. Prince Sadruddin was asked to head up the inter-agency operation from Geneva. And, almost overnight, a small office was set up in Baghdad with staff and other support from UNDP. Bernt Bernander, a recently retired UNDP assistant administrator, was called in, and arrived within days to coordinate the Baghdad unit.

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Sayid Sadiq, 26 July. Sayid Sadiq is a UNHCR field office about 45 kilome-

tres from the border with Iran, set in a wide-open landscape of rolling hills and yellow fields of wild oats. It is one of a network of locations throughout the country distributing food, water, tents, medicines, mattresses and other necessities provided by UNICEF, the World Food Programme, the International Committee of the Red Cross and various other non-governmental organizations. In addition to UNHCR staff, a volunteer group of Western doctors and nurses have set up camp here, and are available on a rotating 24-hour basis. Aside from more common maladies like gastro-enteritis, they treat scorpion and snake bites, and wounds from land mines, which litter the border areas.

While the majority of Kurdish refugees have returned home, nearly 6,000 remain in Turkey and another 200,000 in Iran. Every day, at various border crossings, hundreds of them are transported by truck to transit camps, and on to their final destinations.

Others choose to set up temporary shelters near the border — using branches of trees, old clothing, and metal or plastic sheeting for protection. All await the outcome of political negotiations between Iraqi and Kurdish leaders, which would have the effect of granting them some autonomy. Still others have returned to their original villages and are living, literally, on the rubble of their former homes until they feel confident enough to begin to rebuild. (Starting in the mid-1970s, more than 4,000 Kurdish villages were destroyed by the Iraqi government and replaced by what are known as collective towns.) Life for the Kurds remains in limbo. Yet they possess an indomitable spirit to overcome all obstacles, which is absent in other parts of Iraq.

Planning for the winter is the most immediate concern of UNHCR staff. In mountainous areas, there is sometimes over a metre of snow and temperatures can drop well below freezing. Contingency plans are now being laid to stock winterized tents and other supplies for up to 300,000 people. But the underlying problem remains that of security, which — for the time being — the United Nations is helping to assuage. "The presence of the UN here has probably been more important than the

UNHCR checks Kurdish returnees at Haq Omran border crossing.

Kurdish family camps near the border with Iran.

Photos by Lois Jensen / UNDP

relief items we are distributing," says Jacques Debayle, head of the UNHCR office in Erbil, "because we can observe and report back to the international community."

◆◆◆

Erbil, 28 July It is three days after the deadline given by the United States for Iraq to disclose its nuclear, chemical and biological arsenals. Many civilians, fearing another attack, have stockpiled flour, oil and other necessities. Yet no unusual sounds are heard overhead, except for the daily thunder of reconnaissance flights of US aircraft still stationed in Turkey. The BBC reports that yet another UN inspection team has arrived in Baghdad. It also says that the Security Council remains undecided about whether to permit a partial lifting of sanctions. It all seems part of a macabre waiting game, in which the Iraqi people are the ultimate victims.

"One has no choice but to watch events unfold here and to take each day as it comes," says James Fine, a representative of the American Friends Service Committee, a Quaker organization. "The Iraqis are such a proud and well-disciplined people that you would never suspect what they are going through."

◆◆◆

Baghdad, 1 August It is the eve of the one-year anniversary of Iraq's invasion of Kuwait. But it will probably pass unnoticed, except by the hordes of foreign reporters here to record the mood. The buffet table of one of Baghdad's best hotels is brimming with Iraqi delicacies. Outside, gathered around the pool, is a party of disabled veterans: handsome young men, mostly in wheelchairs, who are rarely seen out in public. It is a reminder that, for many Iraqis, the scars of war will be permanent. Without warning the electricity fails, plunging the crowded restaurant into darkness. Conversations subside momentarily, and then resume. Candles are lit, and the evening moves on. ■

Refugee camp in Jordan.

Gilles Bassignac / Gamma-Liaison

A HUMAN TRAGEDY AVERTED:
THE CRISIS AND JORDAN

Amman, Jordan — Despite its forlorn appearance, Al-Andalus is described as a five-star camp by the young Jordanian who runs it. Located near a highway on the outskirts of Amman, it consists of rows of bright blue trailers, with television, table tennis and even a makeshift mosque. It is one of the last physical vestiges of one of the most trying periods in Jordan's recent history — when it took in, sheltered and helped send home over 750,000 third country nationals fleeing the Gulf region.

The emergency in Jordan followed almost immediately Iraq's invasion of Kuwait last August. Within 10 days, around 45,000 people — the majority Egyptian and Sudanese — had streamed across the Jordanian border and into the city of Amman. They slept wherever there was room — in private homes, churches, schools and mosques. Embassies were working 24 hours a day trying to arrange passage home. By 20 August, the number of evacuees had risen to 65,000, many of whom were camped out in the desert between the Iraqi and Jordanian borders. Overwhelmed by the task of providing water, food and shelter to the stranded, the Jordanian government requested and received assurances of help from the United Nations.

The United Nations Development Programme (UNDP) was already operating at full steam when the formal request for assistance was made on 22 August. For weeks, the UNDP Jordan office had been the point of departure for all United Nations personnel working in Kuwait and Iraq, along with their families. For months afterward, UNDP played the lead coordinating role among UN agencies, NGOs and the donor community in airlifting home hundreds of thousands of evacuees, and in providing food and medical care to people waiting in camps. "All of this was carried out under a feeling of extreme anxiety as to when and where open hostilities might break out," says Ali Attiga, then UNDP resident representative in Jordan. Because of the role of the UN Security Council in the Gulf crisis, United Nations personnel in Jordan became the target of attack. Local demonstrations against the war were waged almost daily in front of the UNDP office.

Throughout this massive evacuation operation, an impressive safety record was maintained. Not a single life was lost due to disease or the lack of food, shelter or medical care. But the crisis as a whole did take its toll on Jordan, a small country of around three million people. Between the loss of aid from its Arab neighbours, income from Jordanian workers in Kuwait and Iraq, disruptions in trade and other factors, the Gulf crisis cost Jordan an estimated US$1.7 billion — close to a third of the country's GNP. With special resources reserved for countries affected by the war, a UNDP project has just been approved to help reintegrate more than 250,000 Jordanian returnees back into the economy. — **L.J.**

THE LOST BOYS OF LIBERIA

BY MARY SPECK

Monrovia, Liberia — Mickey Morris (*centre*) used to be proud of the camouflage fatigues and AK-47 assault rifle that made him a rebel soldier. "I liked it. People were friendly with me," he said, adding quickly, "But I wasn't bad. Some of my friends were bad, but I wasn't."

The fourteen-year-old's rebel activity consisted mostly of breaking into stores or private homes and looting the contents. He wasn't "bad," he says because he didn't kill anyone. Although, like most of the children filling Liberia's orphanages, he witnessed a lot of killing, often done by boys no older than himself.

THE NATION STRUGGLES TO RECLAIM THE CIVIL WAR'S YOUNGEST VICTIMS

Mickey is one of 162 orphaned or abandoned children living in a Monrovia medical institute turned dormitory. Separated from their families by the fighting, most have no idea if their parents are alive or dead. Many like Mickey are ex-"freedom fighters," members of a largely teenage rebel army without training or discipline. Others are members of the once

LIBERIA

Posing for the camera at TNIMA shelter.

Photos by Mary Speck / UNDP

powerful Krahn tribe, now reluctant to reveal their ethnic identity for fear of rebel reprisals.

Nearly two years after rebel forces began an assault on the now deposed government of Samuel K. Doe, Liberia remains a divided country. Out of a population of only 2.5 million, more than 10,000 people have been killed, and more than 1.5 million forced to abandon their homes. Most of the country has been occupied by the rebels of the National Patriotic Front of Liberia (NPFL) led by Charles Taylor. Monrovia, the capital city, is under an interim government propped up by a five-West African-nation peacekeeping force. With the Liberian economy at a near standstill both sides have been fed through a massive international relief effort coordinated by the United Nations.

The UN Secretary-General launched an appeal for about US$14 million in emergency humanitarian assistance to Liberia in December 1990. Efforts were already underway to help some 700,000 Liberian refugees in Côte d'Ivoire, Ghana, Guinea, Mali, Nigeria and Sierra Leone. A second appeal for $135 million was launched in July to fund food aid, health and medical care, sanitation, education, agricultural support as well as programmes for displaced persons, refugees and returnees. The second appeal was aimed at continuing to expand the relief effort throughout the country while trying to revive the agricultural sector which before the war supported some 70 per cent of the country's population.

"The wartime relief effort was the glamorous bit, but the hardest part is still ahead," says Ross Mountain, the UN special coordinator for emergency operations and the United Nations Development Programme (UNDP) resident representative in Liberia. "Reconstruction is less dramatic and much more difficult to raise funds for."

About 30 national and international private groups have participated in the relief effort focused initially at keeping Monrovia and the war-racked countryside alive. Coordinating the effort is a 90-person UN office headed by Mr. Mountain, who formerly ran UNDP operations in strife-torn Afghanistan. "All too often private and government relief organizations have wanted to play their own game without much cooperation," says Mr. Mountain. "But here we've managed to create a structure where we share information, logistics, supplies and expertise."

Working with Catholic Relief Services, the UN's World Food Programme (WFP) distributed some 50,000 tonnes of food throughout the country over 11 months. In Monrovia the results of the food distribution effort were dramatic. Between December 1990 and May 1991, the malnutrition rate for those under five years old fell from 35 per cent to about five per cent. "When we first came the fighting was still raging and people were desperate for food," says Gerard van Dijk, head of WFP operations in Liberia. "Today no one is hungry. The health situation in Monrovia has probably never been better."

Food is also reaching rebel-held territory outside Monrovia in increasing amounts. Since April, convoys of relief trucks have shipped about 20,000 tonnes of rice and other food stuffs to rural areas. "The farmers had already lost one harvest because of the war," says Ray Studer, a programme manager with Catholic Relief Services. "They were in danger of losing another harvest because they had been forced to eat their seed rice."

The relief effort nearly ground to a halt in the summer of 1990 when battles raged in both the capital city and the countryside. Most embassies in Monrovia evacuated their nationals from the besieged and looted city. UNDP pulled out its international staff in May 1990 after soldiers attacked hundreds of displaced persons seeking refuge in its compound, killing a security guard and abducting about 30 people.

But in Monrovia a group of Liberians decided to launch a relief effort on their own. "The foreigners were almost all gone. So we Liberians decided to organize on our own," says Blamoh Nelson, executive officer of the Special Emergency Life Food programme, a Liberian relief group, known better as SELF. "By September those of us who had survived the fighting were in danger of dying from hunger or disease." After meeting with international relief officials flown into the US embassy compound by helicopter, the Liberians were told that if they could set up a distribution network, food would be sent. SELF began its first general distribution of food in October while the West African peacekeeping forces were establishing control over the city. Working as a "technical unit" of the WFP, SELF organized a network of hundreds of volunteers to hand out donated food in each Monrovia neighbourhood.

When the UN international staff returned to Monrovia in December the

Pressing cement into roof tiles at Don Bosco School.

Refugees at Monrovia Free Port, returning from Ghana.

Pre-schoolers are fed at G.D. Gibson High School.

Photos by Mary Speck / UNDP

city was virtually without electricity, potable water or a sewage system. More accustomed to digging rural wells than working on an urban water system, UNICEF found itself repairing a city power plant and water treatment facilities. "Our mandate is children and the children of Monrovia were in danger of dying from diarrhoea," said Carl Tinstman, head of UNICEF operations in Liberia. "We needed to get them clean water. And to pump water you need electricity." After reconstructing a sea wall, rebuilding pumps and plugging more than 7,000 leaks, UNICEF was able in March to begin supplying the city with water and electricity.

The immediate danger of famine and disease has subsided. But Liberia must still cope with the damage inflicted by warfare and ethnic violence on the country's youth. The Orphaned and Abandoned Children (OAC) project is one of the joint efforts by UN agencies and private relief organizations to care for children separated from their families in the fighting. OAC has done more than just provide shelter. Funded by UNICEF, Plan International and Medicins Sans Frontieres/Belgium, the project has tried to trace hundreds of abandoned children's families, many of whom are probably among the more than one million displaced persons still inside Liberia or the hundreds of thousands of refugees in neighbouring countries.

OAC trains counsellors to help children including ex-combatants like Mickey readjust to peacetime. A project run by the Salesian brothers is also providing teenage boys, who make up most of the abandoned children, with vocational training in masonry and carpentry. "We're trying to build their self-confidence," says Weah Doh, an instructor at the Don Bosco School. "They need to know they can earn a living; that they don't need to carry a gun to be important."

On the surface the children careening through the OAC shelter's hallways and scuffling in giggling chaos on its patio seem as normal as school boys and girls anywhere. But the stories they tell are not of ordinary adolescent escapades. Mickey and his best friend Nathaniel Willis, both of whom were evacuated by President Doe's army from their village in central Liberia, tell of fleeing the soldiers after seeing them dump bodies down a well. Nine-year-old J.D. still fears to give the full name that identifies him as a member of assassinated President Doe's Krahn tribe. Separated from his father who is in Guinea and his mother believed to be behind rebel lines, he has nightmares in which

imaginary voices tell him, "I know you." Counsellors had to stop a six-year-old girl at another shelter from leaping out of a third-floor window after she said she saw a figure in white beckoning her to jump.

Many of the children now in shelters spent months on the streets, sleeping in abandoned buildings, wrecked cars or empty shipping containers at Monrovia's port. A UNICEF-funded survey last April of more than 500 street children from five to 15 years old found that 17 per cent of them said they had witnessed the death of their parents. Less than five per cent of the children surveyed had lived on the streets before the war. Most of them told interviewers their most important wish was to find their families or a place to stay.

But not only the abandoned children need to be counselled. "We won't know the full extent of the war's impact on children until we start counselling in the schools," said Esther Guluma, a sociologist who heads UNICEF programmes for children in difficult circumstances in Liberia. More than a year after heavy fighting forced them to close, schools in Monrovia were able to reopen for the regular school year in September. Teachers complain they have their hands full enforcing discipline. "Aggressiveness is high, respect for the community low," says Frank George, principal of a Baptist primary school.

Of even greater concern are the thousands of teenage boys still shouldering assault rifles at rebel checkpoints throughout the country. The stalemate threatened to delay their return to school indefinitely. OAC has provided psychological counselling for 25 ex-combatants to help them adjust to life on the playground rather than the battlefield. "These kids cling to the counsellors. They crave physical contact," said Ms. Guluma. "After all they've seen, after all they may have done, they are still children." ■

SIERRA LEONE: THE NEW BATTLEGROUND

Kenema clinic for displaced persons.

Kenema, Sierra Leone — As the fighting subsides in Liberia, another war is erupting in neighbouring Sierra Leone. In March 1991 rebel forces operating out of Liberia attacked and looted two towns across the border. Rebel forces, including guerrillas from Burkina Faso, Liberia and Sierra Leone, within a few months controlled much of the border area, launching incursions affecting one-third of the country. Tens of thousands of people have fled the region, abandoning much of the country's most productive farmland.

An assessment mission that included representatives of the UN and private relief agencies, estimated in July that 145,000 people displaced by the fighting were in need of food, shelter and clothing. Thousands of displaced people, mainly women, children and the elderly, have poured into the town of Kenema. "They're coming in wounded, half-naked and hungry," says Francis Abdullai, the local Red Cross supervisor. "We're barely coping now and the situation is getting worse day by day."

Outside Kenema the situation is even more desperate. Father Johannes George of Catholic Relief Services found many families hiding in the bush with only wild yams to eat, too fearful and sometimes too weak to attempt the long trek to safety. Using borrowed or rented trucks, Father Johannes braved the fighting to distribute bags of bulgur wheat. "People are near starvation," says the priest, "but they are so afraid of both the rebels and the army they won't come out."

The war is devastating Sierra Leone's already fragile economy. The area affected produces about 80 per cent of the country's coffee and cocoa exports as well as diamonds and gold. With low life expectancy and a high rate of adult illiteracy, Sierra Leone even before the war ranked last among the 160 countries measured by the UNDP Human Development Index for 1991.

In an effort to turn the economy around, Sierra Leone two years ago implemented strict measures to cut subsidies and liberalize trade. Now high defence spending and plummeting exports are reversing progress made toward reform. "We were moving in a positive direction," says A.N.D. Koroma, the Minister of Rural Development. "Now it will take years just to recover what has been destroyed in the fighting." — **M.S.**

BIO-DIVERSITY

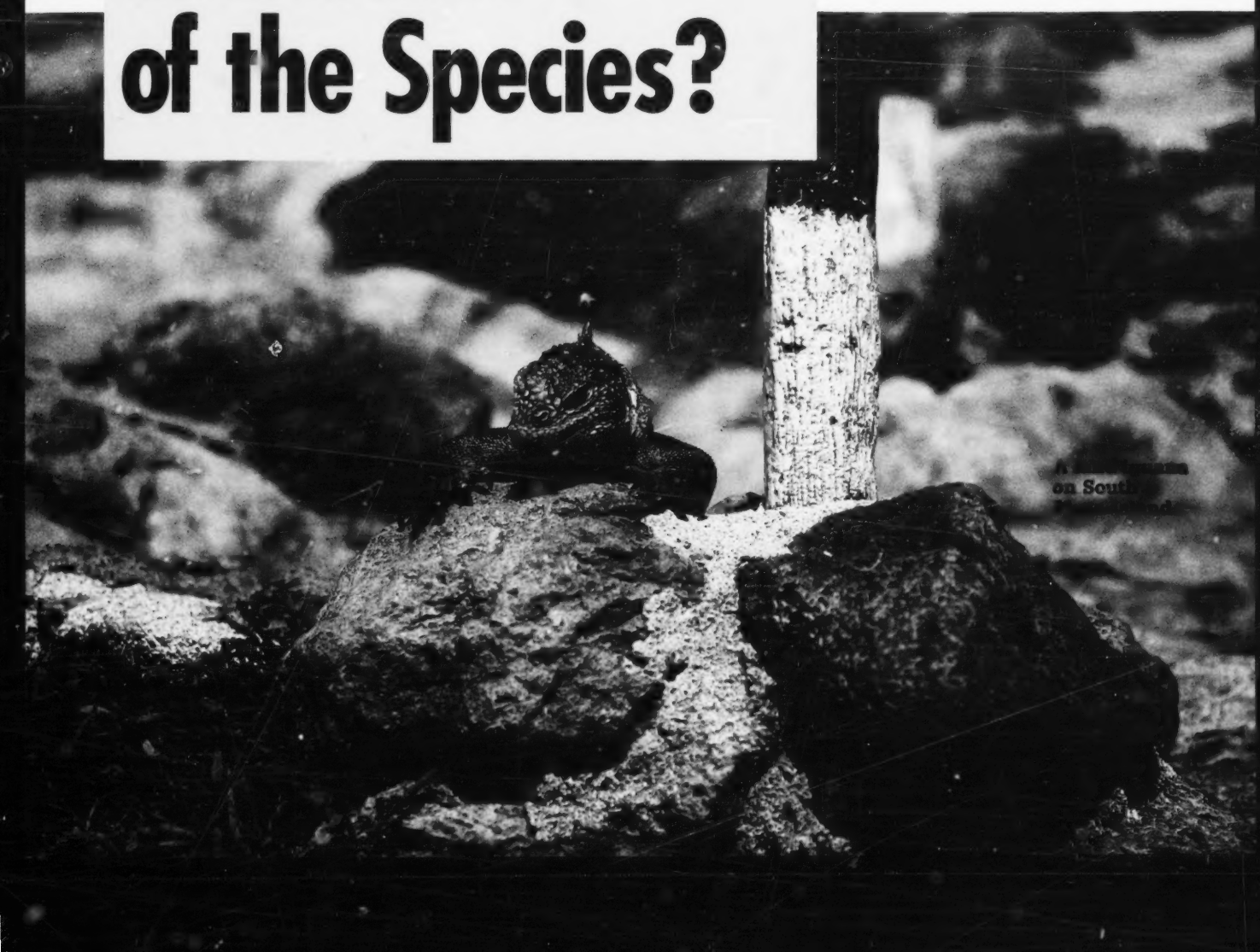
Civilization threatens Darwin's old stomping grounds in the Galápagos

Extinction of the Species?

By Sid Kane

Floreana Island, the Galápagos — A small shipment of bananas that arrived on this barren, wind-whipped island two years ago accidentally brought along a handful of feisty, winged passengers. These aggressive wasps from South America soon dispersed and began displacing the island's more passive, indigenous bees. Today, swarms of the pesky intruders have spread to many parts of the Galápagos archipelago, an island-province of Ecuador located on the equator 1,000 kilometres west of the mainland.

When the famed naturalist Charles Darwin visited the Galápagos more than 150 years ago, lured by tales of exotic animals that would not flinch when approached, he wrote that there were so many iguanas on Santiago Island that he could barely pitch a tent. His theories on evolution and adaptation, detailed in his famous work "The Origin of the Species," were influenced by the observations he made while visiting



GALAPAGOS

these far-flung islands, which rose from the sea some four million years ago. Today, however, the iguanas that crowded Darwin are gone from Santiago Island, mainly because of feral goats and pigs that were introduced by man. They successfully competed with their reptilian rivals for food — native shrubs and plants — and also ate their eggs.

Such intrusions are of immense concern to scientists and conservationists who say that the unique bio-diversity and ecosystems of the Galápagos, which have survived for thousands of years, are now endangered. "Nowhere else can you find such a diverse spread of animal and plant life in such a small geographic area," says Padraig Whelan, science coordinator at the Charles Darwin Research Station, which carries out conservation projects from its base in Puerto Ayora, on the windy, southern coast of Santa Cruz. "It is being threatened and must be preserved."

The prehistoric-looking archipelago, with its smoking volcanoes and large, gliding seabirds, is comprised of 13 main islands and scores of smaller ones. Four of the islands are inhabited, but most people live on only two — Santa Cruz and San Cristobal, which have a combined population of 9,000. The region's unusual mix of marine, plant and animal life boasts many rare and endemic species, including giant tortoises — for which the islands are named — iguanas, fur seals, sea lions, pelicans, flightless cormorants and the only penguins north of Antarctica. Also seen here is the lava gull, which, with its black body and white eyelids is considered the rarest gull in the world. There are seven species of whales in the waters surrounding these islands and three kinds of dolphins. Of the 900 types of plants found here, 24 per cent are endemic to the Galápagos.

More than any predator, the greatest threat to the region's wildlife and ecosystems is economic development due to tourism. Of the 14 sub-species of giant tortoises, three are extinct, largely due to abuses by man. Iguanas have disappeared from some islands and are considered endangered, as are 180 species of plants and three species of marine birds. Black coral, once abundant here, has practically disappeared from the archipelago.

Fast growing and poorly planned towns are causing alarming environmental degradation and coastal pollution. On Santa Cruz, beaches that were once popular nesting areas for sea turtles and birds have disappeared, their sands taken for making cement for construction. Unique hardwood trees have been cut to near extinction, and raw sewage has fouled pristine bays and coastlines.

"The problem of the urban settlements," says Mario Salzmann, resident representative of the United Nations Development Programme (UNDP) in Ecuador, "is perhaps the biggest challenge, and one that we're aiming to help solve."

New policy recommendations for the Galápagos, made with UNDP support, were recently approved by the Government of Ecuador. They come none too soon. The fledgling cities on these islands, which are growing faster than any on the mainland, have inadequate water, power, sewage and sanitation systems. On a balmy night in July, Charles Darwin Way — the main road in Puerto Ayora where tourists jam bars and restaurants — remains darkened because there is not enough power to light the street lamps. Residents and tourists alike have grown accustomed to paying high prices for food — most of which comes from the mainland — and to a water supply that is often unsafe and brackish. A cholera epidemic broke out earlier in the year.

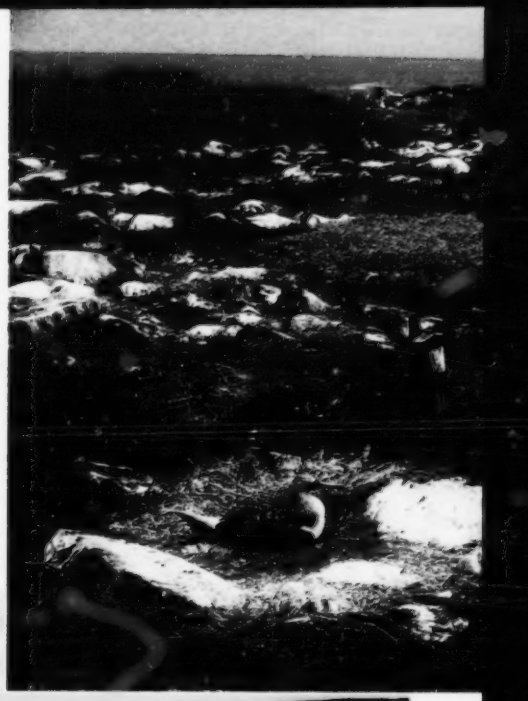
Still, Ecuadoreans are moving here in droves with dreams of striking gold in small, tourist-related businesses. In the process, they have helped to introduce new species of animals, insects and plants that have disrupted some of the islands' irreplaceable ecosystems.

With few economic opportunities elsewhere in Ecuador, conservation concerns have done little to slow growth

Photos by Sid Kane / UNDP

Cactus thrives on Hood Island.

Dr. Hugo Valdebenito: hardwood plantations save native forests.



A pelican surveys Tortuga Bay on Santa Cruz.

in the archipelago. But the government has taken steps to limit the number of tour boats allowed to operate, and to keep animals and plants from being transported to and from the islands. On Santa Cruz, new hardwood trees are being farmed in order to save endangered varieties, and strict measures have been passed to control fishing in the islands' waters.

Still, tensions between environmentalists and would-be developers run high. "There are people who want to build big hotels and make money, and conservationists who want to throw all the people into the sea," says Francisco Borja Cevallos, special adviser on the Galápagos to Ecuador's President.

Mr. Cevallos says that while the government wants preservation, it also needs a strategy for tourism, which is important to both the local and national economies. Organized tourism began in the Galápagos in 1970, with 4,500 tourists visiting that year. By 1990 the number had soared to 45,000. But experts here say that the tourists, who are carefully controlled, are not a problem. Allowed to visit only 43 specified sites rich in wildlife, visitors follow strict guidelines and travel in groups led by guides who are trained naturalists. "The Galápagos are 10 to 15 years ahead of everyone in eco-tourism," Mr. Whelan says, "but it has become a victim of its own success due to the fast growth of human settlements."

Tourism pumps an estimated US$300 million into Ecuador's economy annually. About a third of that figure comes from the Galápagos, which attracts upscale, nature-oriented trekkers from Europe, Japan and North America. Many come to see the islands and then go on to visit the mainland. "If they were to close the Galápagos, it would kill the country's tourism industry," says Eduardo Proaño, general director of Metropolitan Touring, the first company to offer organized tours in the islands. "They need to develop it but with limits. So far the growth here has been uneven and disorderly."

That disorder is in sharp contrast to the natural harmony and balance among the species which so impressed Darwin. Because of their rich bio-diversity, the Galápagos was one of the first spots on earth to be declared a Natural World Heritage Site in 1978. With the goal of protecting them, Ecuador made 97 per cent of the archipelago a national park, and restricted human settlements to the remaining three per cent. But the country lacks the resources to effectively manage and conserve the islands, even though it has received help from numerous sources. These include the World Wildlife Fund, the Smithsonian Institution, The Frankfurt Zoological Society, The New York Zoological Society, the Belgian government, UNDP and the UN Educational, Scientific and Cultural Organization.

A presidential commission that was formed last year to study the special needs of the Galápagos received technical and planning support from UNDP. The group's work resulted in the release of policy guidelines for tourism development and conservation that were approved by President Rodrigo Borja in August. A new project to be financed under the Global Environment Facility (GEF) — an international trust fund for conservation — will help to enact them.

"One crucial recommendation," says Mr. Whelan, "is for better control and eradication of introduced animals and plants." The Charles Darwin Research Station, in cooperation with the Galápagos National Park Service, has been working on eliminating wild goats, dogs and pigs from islands where they have damaged iguana and tortoise populations. On Floreana island, which is a breeding place for the Hawaiian Petrel — an extremely rare marine bird — it is poisoning rats. The egg-eating rodents nearly wiped out the elusive

Photos by Sid Kane / UNDP

Eco-tourism brings both benefits and perils to the Galápagos.

bird a decade ago. Although still considered endangered, the large birds, which can stay out at sea for months at a time, are making a comeback.

Other recommendations address several important points. One is to increase the number of tourist sites in the national park in order to lessen the burden on places now heavily visited. Another is to create a permanent commission that will help shape new policies and programmes for the islands, and a third is to improve the human settlement areas. This objective seems especially urgent to everyone, including Puerto Ayora's mayor, Nelson Herrara. "Our systems are not just inadequate," he says excitedly, "they are super-inadequate."

Two previous international efforts to improve conditions in the towns have not fared well. A trash incinerator that was built in Puerto Ayora by the UN Industrial Development Organization has seen little use, as the diesel fuel to run it has proven too costly. And a desalination plant donated by Italy has remained shut much of the time because of breakdowns, with spare parts taking months to arrive. The water from it is also distributed in plastic bags, which have caused waste disposal headaches.

Other recommendations include the strengthening of INGALA — the national institution in charge of development in the archipelago — and support for the Galápagos National Park Service.

The Park Service, which is responsible for protecting the islands' parks along with the surrounding waters, which Ecuador declared a marine reserve in 1986, admits that it is ill-equipped to carry out the task. It has only four patrol boats, the largest of which cannot reach the outer islands. "We urgently need better boats, new equipment and more manpower," says Galápagos National Park Superintendent Oswaldo Sarango.

Underscoring the urgency of these needs is another vexing problem: illegal fishing is thought to continue unchecked in the marine reserve, which spans 70,000 square kilometres of ocean. Recently, large schools of hammerhead sharks seem to be disappearing from around Wolf and Darwin Islands, the northernmost in the archipelago. "We used to see them quite frequently, especially when diving, but much less so today," says Patricia Topke, a young naturalist from Guatemala who works here as a guide. Pausing for a moment beneath the hot equatorial sun on a winding dirt trail on Santiago, Ms. Topke ruminates further on the fate of the sharks. "We're fearful that it might be due to fishing, but we are hoping for another explanation," she says a bit apprehensively.

Although strictly prohibited in the marine reserve, shark fishing is a difficult enforcement challenge for the park rangers, who are busy monitoring tour boats closer to home. Considered a delicacy in some Asian countries, shark fin meat is in high demand, and foreign fishing boats are believed to have surreptitiously caught and killed thousands of sharks in these waters just for their fins.

"These ships come in during the night," says one long-time resident and hotel owner in Puerto Ayora. "When you try calling them on the radio, they douse their lights and disappear. It is one more serious challenge that we must bring under control." ■

Giant tortoises are bred at the Charles Darwin Research Station.

Sea lions on Santiago Island.

Swallow-tailed gulls are the only nocturnal gulls in existence.

WOMEN

Silent No More

Photos by Ruth Massey / UNDP

Women participate actively at the Foodworkers Union meeting.

Namibian women seek economic independence

By Ruth Massey

Luderitz, Namibia — An unremitting wind blows from the Atlantic through this isolated fishing town on the edge of the Namib desert. But for most black women in Namibia, the winds of change are coming slowly.

Luderitz is really two towns divided by a railroad track. On one side, a deeply conservative community of German origin lives in fine stone houses on streets named Kaiser or Bismark, reminders of the town's colonial past when Germany controlled the territory and fortunes were made from the diamonds that littered the desert around Luderitz Bay. On Sundays, families pray in one or other of the seven Lutheran churches whose spires dominate the town.

Luderitz's black community lives in Nautilus, on the other side of the tracks which lead to Windhoek, the capital, 500 kilometres away. Little has changed for the inhabitants of this teeming shanty town since March 1990, when Namibia gained its independence after more than 100 years of colonial rule, first by Germany, then by South Africa. Although they are now permitted to buy property — a privilege which until recently was reserved for whites only — few can afford to. Instead, they continue to live in jerry-built shacks of corrugated metal, wooden packing cases and whatever else can be scavenged. The opening up of hospitals to all races also means little to them because they lack money for medical care. Most cannot read or write sufficiently to aspire to jobs from which they were once legally barred.

Every morning, gray smoke from scores of cooking fires drifts over Nautilus' desolate landscape of shanties. Schools are overcrowded. There are no cinemas, no hotels, no shopping centres, no parks. Electricity, drainage and sewage systems and paved streets do not exist. Crime and drunkenness are commonplace.

By mid-morning, men without work sit outside bottle shops in cast-off clothing, morosely drunk. If they are lucky,

some are chosen as crew for six months of the year on the large commercial trawlers that ply the freezing waters of the Benguela Current off Namibia's coast, fishing for crayfish and rock lobster. Their catch is what makes Luderitz the centre of a large fish processing industry where many women from the township find work.

On a recent afternoon, about 45 women employed in the canning factories, members of the newly formed Namibian Allied Foodworkers Union (NAFU), gathered in the assembly hall of Nautilus Primary School. They came to meet Sharon Capeling-Alakija, Director of the UN Development Fund for Women (UNIFEM). The Fund, which is administered by the United Nations Development Programme (UNDP), has just launched a three-year, US$1.5 million programme in Namibia. Ms. Capeling-Alakija had come to listen and learn first-hand some of the problems facing these women, for the most part from the Ovambo tribe.

Sitting in a semi-circle, old women with lined faces and mothers nursing children are dressed in their best clothes, many wearing colourful beads and head-dresses. They smile and extend their hands in greeting as Ms. Capeling-Alakija enters the hall. But, speaking in Ovambo through a translator, they are hesitant, unused to voicing opinions and having them listened to with respect.

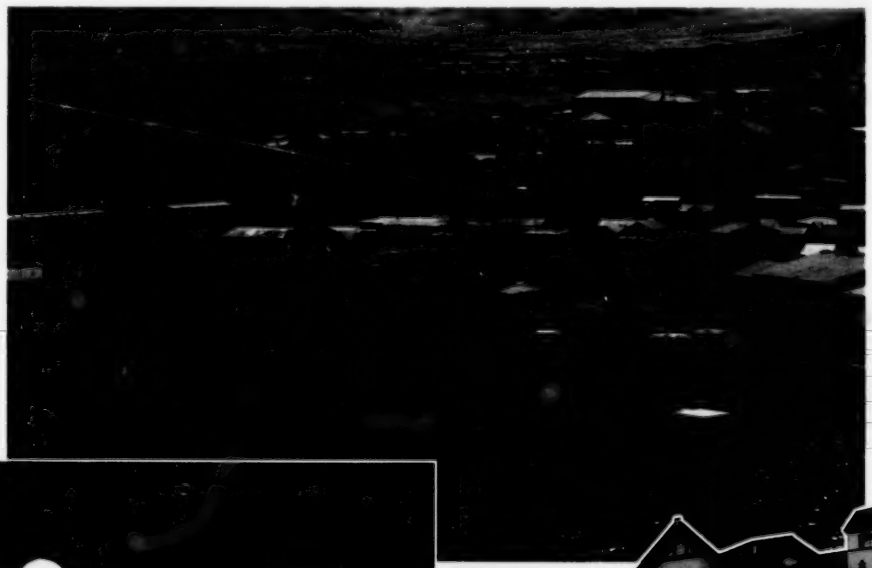
Mavis Hangula, whose husband was killed in Namibia's war for independence, talks of how all goods from the marriage, their house and meagre savings, reverted to her husband's family on his death. Now, she and her children are short of everything — food, clothes, education, possessions, pride. Elizabeth Naftali tells of a husband who abandoned her and their six young children with no means of support. She tried her best, but she had a very hard time of it. The boys stopped going to school, and the eldest girl had a baby shortly after her 13th birthday.

NAMIBIA

Ida Jimmy Ihaeiros sits and listens, wearing on her ample bosom the medal she received fighting for Namibian independence. During the war she was imprisoned. After five years, during which time she was tortured and her limbs were broken, she was released and went to work in a canning factory until she was fired for organizing co-workers to protest their conditions.

Then there is Lena Nanguna, abused by an alcoholic husband who has several "love wives." She tries to feed, clothe and pay for her children's school-

Luderitz is a centre of crayfish processing.



Many kitchens have no running water, gas or electricity.

House of Hans Luderitz, a 19th century German merchant.

Ruth Massey / UNDP

Fish drying in Luderitz's shanty town.

ing out of the $45 a week she earns at the canning factory. After paying $10 a week for day care for her youngest, there is not much left for food and rent on the shanty she shares with her five children.

Black women at the canneries still face discrimination. "White women get higher pay," says Helena Badenhorst, who runs an education centre in Luderitz for the Rossing Foundation of Namibia. "If they have a sick child they can stay at home to look after it and still get paid. They get tea and coffee breaks and free transportation to the factory. None of these benefits are available to black women."

Namibian women are also victims of their own culture. "Each of the tribal groups in Namibia — the Hottentot, the Ovambo, the Himba — has different traditions," Ms. Badenhorst explains. "But there is not a single group where women don't come out disadvantaged."

For years, the judicial system has discriminated against women. Even today, although Namibia's new Constitution guarantees equality for women, laws are still on the books that prevent black women from owning their own homes or obtaining bank credit without their husband's permission. Nor has the government given priority to changing existing tax structures, whereby children are regarded as dependants of the husband, who gets tax relief for their support. Meanwhile, the wife, if she is a wage-earner, pays higher taxes although she is the one who traditionally bears responsibility for the children's welfare.

Rape is a constant fear for women in the township. "We cannot walk outside after 7 p.m.," says a woman nursing a baby. "If you get beaten or raped at knife-point, the fact that there are no street lights makes it impossible to identify your attacker. At least if we had lights we could recognize him and report him to the police."

Earlier in the day, at a gathering of primary school teachers, Ms. Capeling-Alakija heard descriptions of classrooms with 60 students and hardly enough space to move between desks. The teachers spoke of raped and battered children, sparsely attended parent-teacher meetings, and the danger of visiting homes where parents have drug and alcohol problems. The only well-attended meeting had been the one on child prostitution, when 100 parents turned up. At the junior high school, 27 girls were pregnant or already had a child. As one teacher put it, "Parents wait for someone else to solve their problems because they feel powerless to solve them themselves."

But the women from the canning factories who had come to meet Ms. Capeling-Alakija were different. They appeared determined to find solutions to their problems. UNIFEM, they learned, would help by training women to manage their own small-scale businesses. First, courses would be provided for trainers who would then teach women to become self-employed. They would learn how to set up gardens to produce food, or launch brick-making cooperatives, or engage in handicrafts production and marketing.

Over the next two years, 30 trainers will train more than three thousand women in basic business skills, concentrating on the northern regions in the first year and the southern part of the country, including Luderitz, in the second year.

It is after 6 p.m. by the time the meeting ends. Buttoning their cardigans and drawing in their shawls against the evening chill, the women hurry through the sandy streets to their rusting shanties with cement floors. But tonight there is a sweetness to the air, there is hope. ■

AGRICULTURE

Emma Robson / UNDP

Renewing Niger's soil is more critical than additional rainfall

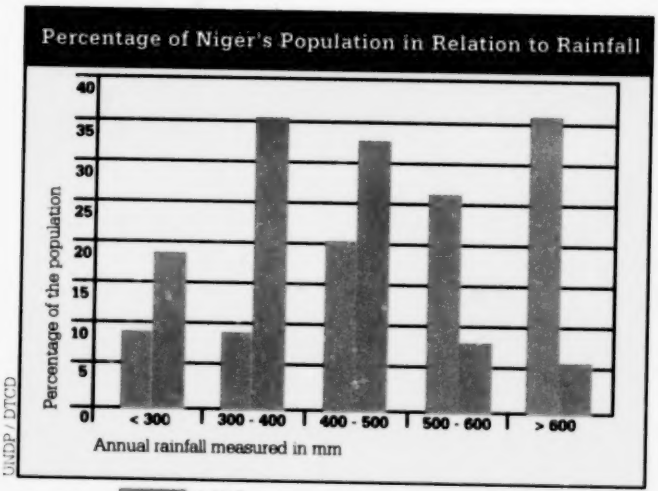
Sahelian Africa Awaits its "Green Revolution"

By Emma Robson

Niamey, Niger — Wearing a conical hat and mirror sunglasses to deflect the sun's glare, Amadou Oumarou shows a group of visitors the sum of his labours in a wilderness of sand just outside the capital. They consist of a few rows of dry millet, some shrivelled wisps of sorghum, a few emaciated goats and a houseful of hungry children. "There is too little rain, too little manure, and my animals eat what little crop I have," says Mr. Oumarou.

His lament is a common one throughout much of Sudano-Sahelian Africa, where rainfall averages have fallen in the last 30 years to record lows, causing a string of droughts that have sent food production and agricultural exports plummeting. Niger's 1990 millet crop was one-third of its usual output.

In common with most farmers, Mr. Oumarou blames lack of rain. According to Karbo Attahirou, Chief of the government's Hydrogeological Service, in 1960, more than 80 per cent of the population lived in regions receiving more than 400 millimetres of rain each year. By 1988, this had dropped to less than half of the population. During the same period, the area of the country getting in excess of 300 millimetres of annual rainfall receded by 150 kilo-



UNDP / DTCD

Centre workers dig to assess moisture around tree roots.

metres. Meanwhile, the country's population has doubled to 7.5 million. It is not clear why Sahelian Africa is drying up, or whether "normal" patterns of rainfall will ever return. Some climate experts believe drought may be linked to increasing deforestation and global warming, and therefore possibly permanent, while others see it as a cyclical phenomenon. "Niger has gone through several periods of unusually low rainfall," says Mr. Attahirou. "Between 1910 and 1920 there was a terrible prolonged drought."

While the scientific debate continues, development experts advocate making the best of existing conditions to maximize food production. "The region's population is increasing by three per cent per year," says Charles Renard, a Belgian agronomist at the Sahelian branch of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Niamey. "Yet food production is increasing only one per cent."

Droughts have curtailed agricultural exports in most Sahelian countries. Deprived of the main source of foreign exchange, governments have gone deeper into debt and become more dependent on foreign aid. It is now estimated that up to one-third of the region's population — well over 100 million people — face chronic food insecurity.

Dwindling rainfall has forced farmers to cultivate marginal lands to increase production. In Niger and Mali, the area under cultivation has doubled in the last 20 years. At the same time, grain yields per hectare have decreased by one-third. "The region's natural resources are really exhausted," says Mr. Renard.

While lack of rain is a major obstacle to increasing food crops, ICRISAT scientists have concluded that the main problem is lack of soil fertility. "The soil has far too little phosphorus and nitrogen," says Mr. Renard.

In experiments conducted in Burkina Faso, Mali and Niger, ICRISAT has shown that with a few modest changes in farm practices, soil fertility can be dramatically improved to produce higher yields. "By adding phosphorus alone to the soil, local varieties farmed traditionally have achieved a three-fold increase in yields," says Mr. Renard. By rotating grains with nitrogen-fixing legumes such as cowpeas and chickpeas and adding phosphorus, farmers working under the direction of ICRISAT achieved even better results.

In 1988, after three years of rotating millet and cowpeas in four alternate squares on one plot, farmers achieved more than one tonne of millet per hectare, compared to less than 300 kilogrammes under the traditional system. "1988 was a year of exceptional rainfall," says Mr. Renard. "But even in poorer years yields have more than doubled."

Legumes fix nitrogen in the soil and improve its organic content. After the legumes are harvested their stalks also make a highly valued animal fodder. Moreover, animals tend to avoid grazing on grains if legumes are planted alongside.

When grown on their own, legumes are often stricken by disease and dried out by the heat. But when grown in the partial shade of grains, they are protected from harmful insects and the damaging effects of the hot strong winds that accompany the rainy season. These winds race at speeds up to 100 kilometres an hour, spraying scorching sands at temperatures of up to 60°C. One storm can shift 300 tonnes of sand per hectare, often suffocating young seedlings.

ICRISAT, a research group founded by the Ford and Rockefeller Foundations

Some soil is rich enough to grow crops, but needs extra water.

Photos by Emma Bekele / UNDP

Goats nibble acacia leaves.

and funded by more than 30 agencies including the United Nations Development Programme (UNDP), set up its Sahelian branch in 1981 with the ambitious aim of taking Asia's "green revolution" to Africa's semi-arid tropics. In the early 1980s, improved grain varieties developed by the research institute's Asian centres were tested throughout the region.

But once sown in the hostile Sahelian environment, the imported seeds produced yields no better than those achieved with local varieties. This prompted the institute to shift its research focus. "In the medium-term, if there is a breakthrough, we now believe it will come from better management rather than improved varieties," says Mr. Renard.

The centre's current thrust is to improve rain-fed cultivation of five basic crops — millet, sorghum, cowpeas, chickpeas and peanuts — using an integrated approach. "Until we get energy back in the soil," says Ronald Gibbons, executive director of the Sahelian centre, "new seeds are unlikely to have much of an impact."

Agroforesters are studying the effectiveness of various grasses and shrubs as wind barriers, while livestock specialists are studying the dietary preference of animals for these types of vegetation. Indigenous Gamba grass has been found to make a valuable contribution. "It's very popular with farmers," says US agroforester Rick Vandenbelt. "It protects their crops well and they sell it at the end of the season as straw for fodder."

In one experiment, the grass managed to trap 2,250 tonnes of sand per hectare in four years. The shrub acacia Bauhinia was selected as another useful crop. Goats find it palatable and therefore eat it rather than the crop it is sheltering from the elements. It is also less susceptible to climatic variations.

Other crop management improvements tested by the scientists include the practice of laying millet stems as manure on top of the soil. This helps stop wind erosion, improves soil fertility, and as the temperature of the partially insulated soil rises above 50°C, it kills pupating pests such as stembores, a major menace to millet.

The scientists are optimistic that by persuading farmers to adopt some of these techniques, the countries of the region can substantially lessen their dependence on food imports. "Already, Niger can be self-sufficient in millet and sorghum in years of good rainfall," says Mr. Renard, "but phosphorus must be added, if the country is to increase production."

Importing sufficient phosphates to satisfy an estimated need in Niger of 30,000 tonnes a year would be too costly. But there is a promising alternative. A recent study funded by the European Community and the US Agency for International Development suggests it is feasible to exploit two large phosphate deposits existing in the country. These deposits have not been tapped because they are not soluble. The new study proposes a new process using sulphuric acid to make them soluble.

If this proposal pans out, Niger could become an exporter of phosphates in coming years, for its reserves — more than one billion tonnes — far exceed its needs. Phosphate exports could generate some of the capital needed to tap deep underground water reserves on a large scale. Currently, only one-fifth of the 10 per cent of Niger's land that is suitable for irrigation is watered. "The single biggest problem in the whole region is lack of phosphate," says Mr. Gibbons. "It's possibly more important than (more) water."

Mr. Oumarou thinks not. But if he is patient, cacti and acacia shrubs he has recently helped plant as part of a reforestation effort should help safeguard his future harvests. With funding from the UN Sudano-Sahelian Office, farmers living on the perimeter of the capital are tending shrubs sheltered by tall trees planted by the local authority. "The aim," says Laminou Attaou, a director of Niamey's Department of the Environment, "is to create a protected microclimate around the city in which crops can thrive even without more rainfall." ■

Masulita Makes a Comeback

By I. Rajeswary

Kampala, Uganda — The aftermath of any war leaves a residue of devastation and pain. Uganda's seven-year civil war was no different. In Masulita, a district 90 kilometres from the capital city of Kampala, many children lost both parents in the fighting.

There was a desperate need for an orphanage. Two years ago, the Uganda Women's Efforts Social Organization (UWESO), led by Janet Museveni, wife of Uganda's President, raised enough money to build one. First, however, UWESO had to build housing for the orphanage's teachers, counsellors and administrative staff.

The question was — how could UWESO afford to build homes from scratch in a district far from Kampala and reached only over a narrow, rutted road? Hiring an outside contractor would push construction costs well beyond UWESO's means.

As it turned out, the answer was found in the district itself when Mrs. Museveni heard of the construction talents of young people from the newly created Masulita Vocational Training Centre. The President and Mrs. Museveni were particularly impressed with the centre's products on display at a trade exhibition in Kampala last October. Carpenters, brick-makers and welders trained by the centre seemed to be the natural choice to build five staff houses on the orphanage site.

"This recognition," says Godfrey Sebyala, a senior supervisor at the centre, "did not fall in our laps. It was through sheer hard work." Mr. Sebyala should know. With assistance from the United Nations Development Programme (UNDP), he was one of six men who launched a drive to set up the centre four years ago. Today, it is cited by the government as the type of community-based effort that all Uganda could emulate.

Masulita needed all the help it could get. Once a prosperous agricultural area in the Luwero Triangle northwest of Kampala, it suffered extensive damage during the war. President Museveni's guerilla National Resistance Army (NRA) took root here and government troops mounted murderous sweeps across the district seeking to wipe out NRA cadres hiding in the area. At the war's end in 1986, many schools and clinics had been destroyed, and numerous farms and homes were abandoned.

Almost 90 per cent of the pre-war population had fled. Education had been disrupted and Masulita was saddled with young men and women with little schooling. "The elders felt that the next best thing was to teach them practical skills," says Mr. Sebyala, "so that they could fend for themselves and be of service to the community."

In 1987, the government donated four hectares of land to launch the centre. The community cleared it and built temporary wooden shelters for classrooms. A year later, the government obtained US$320,000 from UNDP to build a formal trade school. It was initially managed by local representatives of Internationale Contre la Faim (AICF), a French non-governmental organization headquartered in Paris.

The first young men were recruited in early 1989 for year-long courses, 15 in brick-making and 10 in carpentry. "They learned on the job to make bricks," recalls Mr. Sebyala, "which we later used to renovate our shelters."

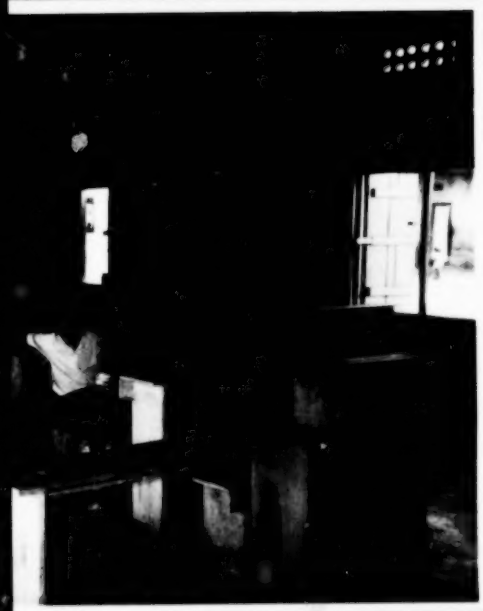
Six months later, 10 more were recruited for a one-year course in metal

UGANDA

The Centre built desks and benches for the primary school.

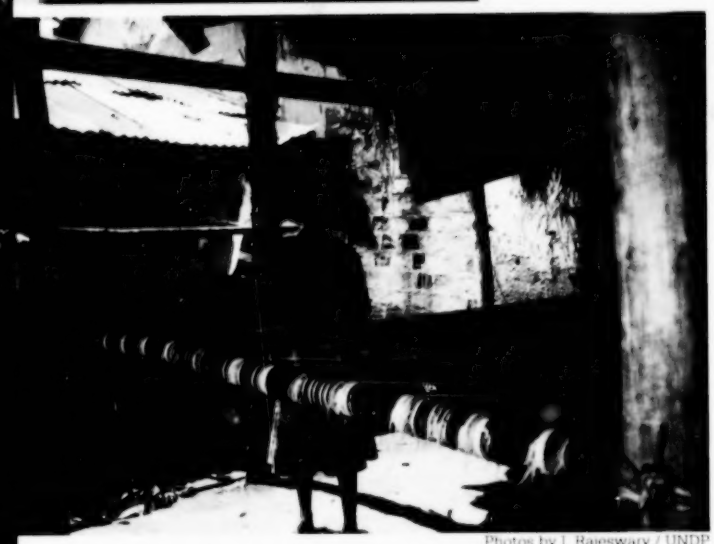
Ugandan community, torn by war, rebuilds itself

Trainees learn to make looms for weaving.



welding. "We had no electricity then because all our transformers had been damaged in the war," says Mr. Sebyala. "The students rode the bus to Kampala or Lugogo once a week to learn welding." Four months ago, the centre received power. Now almost everyone in Masulita has electricity. In August 1989, 12 young women were selected to study weaving over a four-month period.

At the outset, training at the centre was free. "The students had a lot of enthusiasm even though our facilities were minimal at best," says Mr. Sebyala. But despite their enthusiasm, teaching was not easy. "Many could barely speak English," says Mr. Sebyala. "They could only communicate in their local dialect. We had to translate all our instruction manuals, which were in English."



Joyce Nasakka weaves a bedspread in her backyard.

Photos by I. Rajeswary / UNDP

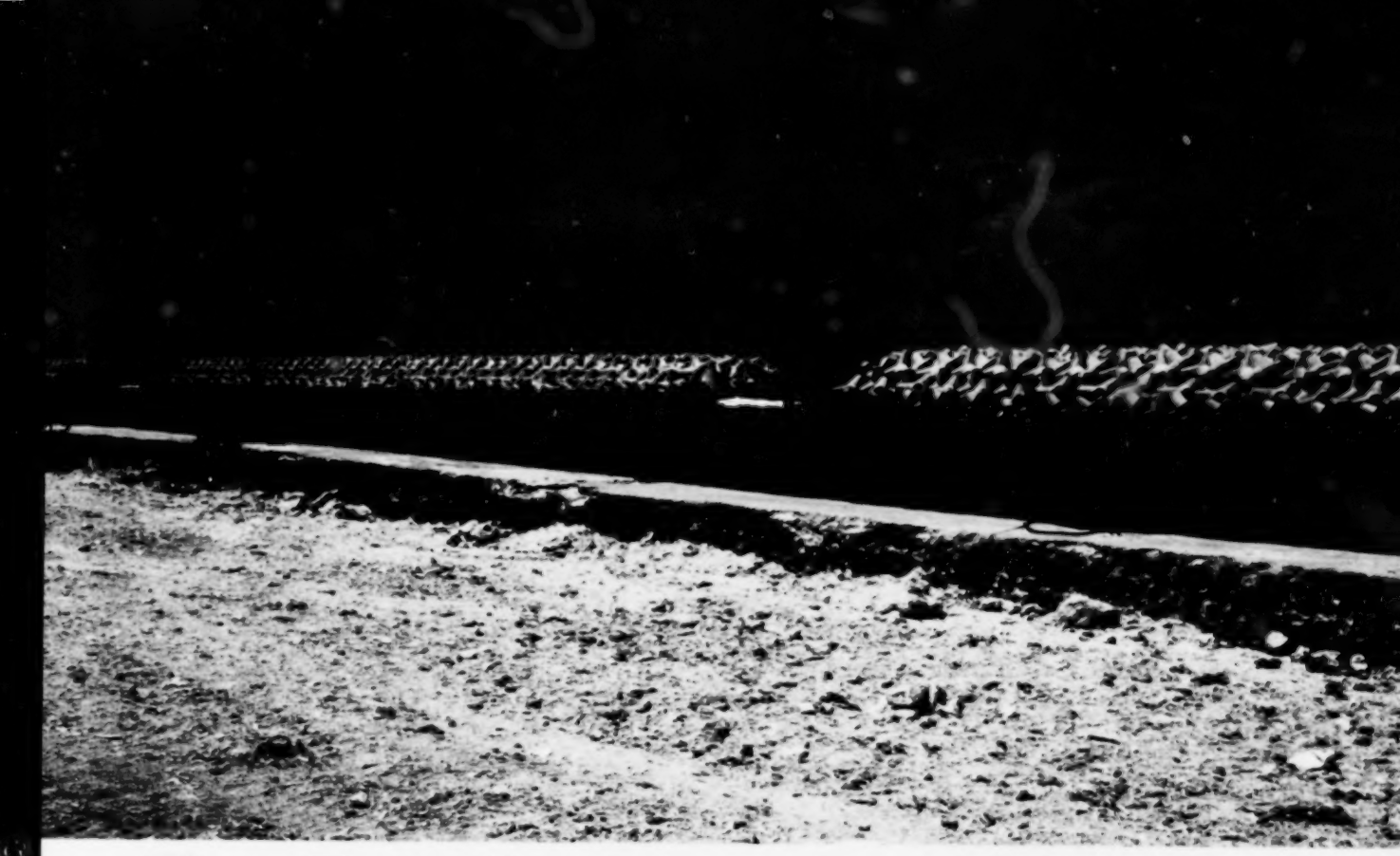
The centre also had trouble attracting staff. Access to the school from the main road is still a dirt track riddled with potholes. The 16 kilometres to the nearest paved road takes 40 minutes in a four-wheel drive vehicle. The centre's administrators had to offer above-average salaries to vocational experts to entice them here.

Despite the obstacles, the centre has turned out 16 carpenters, 24 brick-makers and 16 welders. Some have opened their own workshops in Kampala. Fifty women have now graduated as weavers, many of whom are earning money for the first time without leaving their homes. Joyce Nasakka, 26, is one of them. The centre's carpentry students erected a shed in her backyard and assembled a loom. Ms. Nasakka weaves bed covers which the centre buys from her at $8 a piece and resells to tourist outlets in Kampala. "By selling my handiwork to the centre," says Ms. Nasakka, "I am assured of a steady income."

The centre's carpentry unit has been contracted to build benches and tables for Masulita Primary School. "The children used to sit on floors before," says Mr. Sebyala. "Now they can study in comfort." Under another contract, the metal works unit is fashioning 100 double-decker beds for Masulita Secondary School. Similar beds retail for $70. The centre charges only $50.

Masulita is well on its way to recovery and many who fled the district when war broke out are returning home. But UNDP funding for the centre runs out at the end of the year. "We might have to start charging fees," says Mr. Sebyala. "In addition, the time has come to set minimum entry qualifications to enhance the centre's reputation as an established vocational school."

Already, Michael Kyazze, deputy headmaster of Masulita Secondary School, has a list of candidates from among his students who are applying to the centre for carpentry and welding courses next year. They are willing and able to pay their own way — one more sign of the community's comeback and the centre's key role in reviving Masulita's economy ■

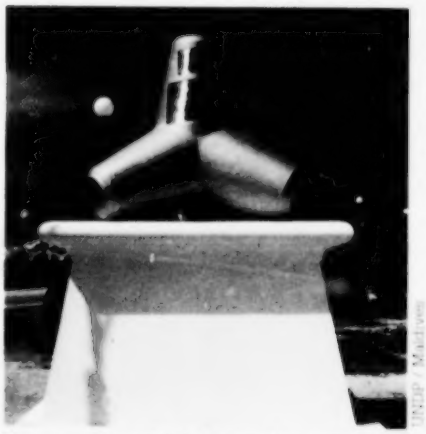


The Fragile Islands of Maldives

By Mary Lynn Hanley

Malé, Maldives — A large imposing monument sits in the middle of a square on the island of Malé, the capital of Maldives. It is not a statue of the founder of the country, nor a military hero on horseback. Rather, it is the likeness of a large tetrapod, or four-pronged building block — the kind used to construct the sea wall which shields the island from the surrounding Indian Ocean.

For Maldives, the ocean is the greatest threat as well as its greatest asset. It provides a basis for the thriving tourist industry, now the largest earner of foreign exchange, as well as the fish and seafood which sustain the population and constitute the main export. But the waters also hold an ever-present danger. People still talk about the giant waves which engulfed Malé in 1987, flooding two-thirds of the capital and causing more than US$40 million worth of damage. Severe storms hit the islands again this June, rendering 10 per cent of the nation homeless and inflicting damages estimated at $30 million.



Tetrapods, which form the sea wall around Malé (top), are honoured in the town square (above).

An even greater catastrophe may be in the offing for the low-lying archipelago if the worst-case global warming scenario comes to pass. Some scientists predict that warmer temperatures could cause ocean levels to rise, since molecules in warmer water expand and icebergs could melt. If this happened, as most of the islands of the Maldives rise only one or two metres above sea level, the country could disappear entirely within the next hundred years.

MALDIVES

Indian Ocean archipelago strives to safeguard its environment

"Some people have asked whether we are making plans to move our entire population," says Hassan Sobir, Deputy Minister of Planning and Environment. "That is something that we do not look forward to." While international specialists debate long-term possibilities, Maldives is concentrating on the immediate practical matters it has the ability to control. The government intends to further develop fisheries and tourism, to increase agricultural production, to train a skilled work force, and to improve living conditions. These efforts receive support from the United Nations Development Programme (UNDP). Underlying them is the firm conviction that development and the environment are linked.

Straddling the equator, to the southwest of India and Sri Lanka, Maldives is made up of 1,200 small islands, 202 of which are inhabited by the nation's 214,000 citizens. While the country extends over 90,000 square kilometres, its land surface is no more than 298 square kilometres. The islands are grouped into atolls, or necklaces of islands surrounding a lagoon. Most are no more than one kilometre in length.

Balmy temperatures, crystal clear waters and pristine sandy beaches ringed by tall coconut palms have made Maldives an increasingly popular tourist haven. So far the government has turned 50 uninhabited islands into resorts, separating vacationers from the general population, which is Sunni Moslem and of mixed Sinhalese, Indian and Arab stock. The annual number of visitors has reached 200,000. They bring in $80 million in foreign exchange, though much of this goes out again due to the need to import most of what the tourists require.

"There is no acute poverty here," says Mohammed Farashuddin, UNDP resident representative. "People have their basic minimum requirements." Over 90 per cent of minimum daily calorie intake is met. The adult functional literacy rate is over 95 per cent. Communications are well developed, with inhabited islands linked by high frequency telephone or radio facilities. Transport is more of a problem. "Dhoanis," the traditional boats used for fishing and transporting people and goods, regularly travel back and forth among the islands. Most are privately owned. Only a few are mechanized, however, and a trip from Malé to some of the inhabited southern islands can easily take five days.

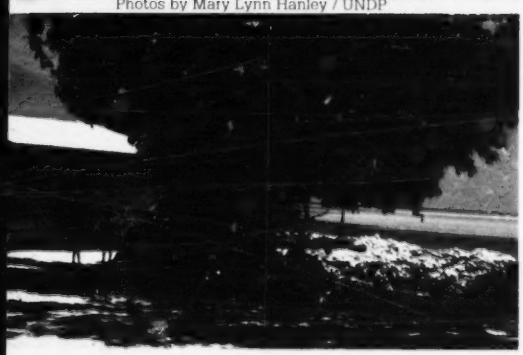
Despite recent advances, Maldives remains one of the countries the UN classifies as "least developed." Yearly per capita income in Malé is $1,100, but only $400 in the outer atolls. At least 90 per cent of the goods consumed are imported, as well as all capital goods. Apart from a few garment factories in the south there is virtually no manufacturing. The only indigenous activities are fishing, agriculture, and cottage industries. There is also an acute shortage of skilled labour, requiring the use of many foreign workers. Nearly 50 per cent of the population is under 15 years of age. As it is growing at the rate of 3.7 per cent yearly, the number of Maldivians could double within the next 20 years.

Keeping the environment intact for the coming generations is the challenge the government is squarely confronting. "In some of the projects we have undertaken we have not been very careful about the environment," says Mr. Sobir. "Sometimes we have been breaking up our reefs and using the coral for building purposes. We are now identifying areas where people should not be taking coral." The reefs provide a home for bait fish and protect islands from waves. Once mined for constructing houses and sea walls, coral takes many years to grow back. "We also have guidelines on waste disposal and the storage of hazardous wastes," says Mr. Sobir, adding that the government will clear all future public and private sector projects to ensure that they are environmentally sound.

Malé and the outer atolls have different development needs. The capital's main problem is its growth. Sixty thousand people are already crammed into an area of 1.6 square kilometres. Since there is no more room to expand, the government plans to develop the neighbouring island of Vilingili, only a few

Garbage collected will be used to extend the airport island.

Photos by Mary Lynn Hanley / UNDP



Taki ; coral to build houses and sea walls is now restricted.

Aishath Ada grows melons and squash in her garden on Mulah.

kilometres away, as a satellite town to take the overflow.

Another problem concerns the 28 tonnes of garbage Malé generates each day. A UNDP-funded study conducted by the UN Centre for Human Settlements (HABITAT) determined that recycling is not the answer since the bulk of the refuse is non-recyclable household waste. Instead, garbage will be collected at night, placed into containers, and transported to the airport island across the lagoon where it will be used as landfill for a planned expansion. Dumping sites will be closely monitored for any biological or chemical seepage.

Johamed Jabir, Chief of Meemu Atoll, speaks for the majority of Maldives' atoll chiefs in naming his priorities. "We want to construct jetties," he says. "We must prevent coastal erosion and build water tanks. We need to deepen island passages." The deeper channels are needed to make the islands more accessible. In many parts of Meemu Atoll the lagoon is so shallow that dhoanis must be anchored more than a kilometre from shore, where supplies and passengers destined for the islands are transferred to small rowboats. Mr. Sobir must weigh the atolls' needs against their environmental implications. "To make entries for harbours we need to blast the reef," he says. "We have guidelines on how much we should do." UNDP is providing several fellowships for environmental studies abroad to train additional Maldivians to make these vital decisions.

Agriculture is of varying importance for the atolls. Some islands can support little vegetation beyond breadfruit and pandanus, a sweet, fibrous fruit distantly related to the pineapple. Others, endowed with better soil, cultivate a variety of fruits and vegetables, including mangoes, bananas, papayas, watermelons, limes, yams, squash, pumpkins, chilies, sweet potatoes and taro. Mohamed Zuhair, Assistant Director of Planning and Environment in the Ministry of Agriculture and Fisheries credits some gains in production to the UNDP-supported Integrated Atoll Development project. Executed by UNDP's Office for Project Services, it works in both Maldives and the Pacific. "Although most income still comes from fishing," he says, "we now find some people who are virtually dependent on the soil." The project has also helped to raise consciousness about the need to include vegetables in the diet.

Among the farmers who have benefited from training, seeds and agricultural tools is Aishath Ada, a resident of the island of Mulah in Meemu Atoll. Proudly displaying her giant squash and watermelons, she recalls her battle against insects, which she was taught to control using natural methods such as treating plants with solutions of water mixed with pounded chilies or tobacco leaves. "We don't encourage the use of insecticides because of the fragile conditions," says Mr. Zuhair.

Looking to the atolls for a future source of skilled labour, as well as for locations for new industries, the government is planning to create regional growth centres. "It is very difficult for a small country like ours with minimal or non-existent resources to develop 202 islands for habitation," says Mr. Sobir. "We would have to provide generation capacity, waste disposal facilities, telecommunications, hospitals, schools — all this on every tiny dot." Instead they will try to attract people to the larger islands by equipping them with these amenities.

A major fisheries project is already planned for Huvadhu Atoll in the south, said to be the largest atoll in the world. Maldives already exports some frozen fish to canneries in Thailand and the dried "Maldives fish" produced by women on the atolls is a highly prized delicacy in Sri Lanka. But total fish exports of 30,000 metric tonnes a year will be considerably augmented by the new project, which will set up additional cold storage facilities for the export of frozen fish. Estimated costs are $28 million to $30 million, with investment coming from a consortium of donors including Norway and the International Development Association. "It has become very expensive because of the environmental concerns," says Mr. Sobir. "We are not allowing any mining of coral for this project. All building materials will have to be imported." Also to be provided is equipment to clean up possible oil spills from the ships that will be coming in to load fish and unload fuel.

Finally, there is Maldives' campaign to involve the public in environmental protection, notably through the media. But while the islanders are putting forth their best efforts to protect their fragile ecosystem there is little they can do about their country's long-term fate. The Maldives' ability to survive may ultimately rest with the willingness of the developed countries to curb emission of the greenhouse gases that are heating up the atmosphere. ■

Michael Friedel

Blue Belt Protection

Vilingili (foreground) will become a suburb of nearby Malé.

Vilingili, Maldives — Just 10 minutes by motorized dhoani from Malé, the 25-hectare island of Vilingili has had a varied past. It was once a prison island and later a resort run by a tour company. When the company's lease ran out two years ago the government reclaimed the island for resettlement. Along the way Vilingili acquired coconut trees, wells, tourist cabins and the national telecommunications centre.

Nobody lives there today, but that may soon change. UNDP and the UN Centre for Human Settlements (HABITAT) are helping to prepare it to be a suburb, to relieve severely overcrowded Malé. Applications to resettle have already been received from half of Malé's households, representing 30,000 people.

Drinking water supply holds the key to Vilingili's future. It was found that water now available from underground reserves and rainfall could support 9,000 people for two months. To accommodate at least that many inhabitants permanently, recharging the aquifers by pumping recycled, treated waste water into them has been proposed. "You'd have to make sure that the recharge was well balanced with how much water was being drawn up," says Chris Radford, Human Settlements Adviser from the UK. "In theory one should have as much water as one needs." The feasibility of the proposal is being evaluated from both health and technical standpoints. If it proves viable it will be carried through to the design stage.

Plans have also been drawn up for sewerage, a harbour and a ferry service to Malé, while a blueprint for community services is almost complete. An environmental protection zone is included in the plans, which are expected to cost $20 million to implement.

Mr. Radford feels that many countries may have to consider solutions similar to the one proposed for Vilingili as they cope with their problems of urbanization. "We've all heard of a green belt," he says, referring to the area of land designated for preservation within or around a city. "I've defined this situation as a blue belt. The ocean is a physical restraint on the further development of Malé. In many countries you get rapid growth on the fringes, unserviced and unplanned. Here, the blue belt offers a tremendous opportunity to create a much better habitat for people." — **M.L.H.**

In the Aftermath of War, Let's Put People Before Politics

By Bernt Bernander

July 1991 — I am standing on the balcony of my Baghdad hotel overlooking the Tigris River, the city lights casting their reflection in its black waters, pondering a multitude of contradictions. The night breeze is heavy with the acrid smell of fireworks spent in celebration of some or other revolution. The streets below bustle with late evening traffic.

To anyone who had visited Iraq a year ago, nothing, on the surface, seems to have changed. Authorities put the best face possible on the disaster which has struck, appealing to national pride. At times the effect is bizarre: the shortage of chlorine is acute in Baghdad, but there is still enough to go around for the swimming pools of the large hotels. A newspaper photo shows Saddam Hussein listening studiously to an engineer's explanation of reconstructing a bridge: the image of a solicitous father figure devoted to development.

Beneath all appearances is the inexorable march toward yet another calamity. The dire prospects which loom ahead are documented in a July report of a mission headed by Sadruddin Aga Khan. A year of economic sanctions have exacted their toll. The country has been shedding its fat, and imported reserves — be they fireworks from Macao or Swiss-made drugs for the treatment of diabetics — are almost depleted.

It is already too late to stop famine and disease from spreading to large sections of the population. Even if all sanctions are lifted immediately, it could take up to three months to restock the pipeline of necessary imports. And the lack of spare parts means that the supply of electricity — which has been restored to 40 per cent of its pre-war level — is bound to plummet.

What appears certain is that once the bottom has been reached, the road to recovery will be long and arduous. Middle-aged Iraqis tell me that they have lost their best years to war and its uncertainties. First the war with Iran, then Kuwait and its aftermath, which will mark their lives for the next five years. In that space of time, society will have changed profoundly. More likely than not it will be riddled with crime, corruption and prostitution, judging from what already is happening.

Human distress, whether created deliberately or resulting from the political ambitions of a national government, has always been decried. Similarly, politics have traditionally had no place in international emergency assistance. By and large, the imperative to save lives and to help those in need has overcome whatever reluctance there may have been to prop up unpopular governments.

All of this seems to have been turned on its head in the case of Iraq. For can there be any doubt that the spectre of famine and the breakdown of medical services is now being applied for political leverage? And that a sacrosanct tenet of international conduct is in the process of being shattered? The hunger and misery of the Iraqi people should be blamed on Saddam Hussein, say those in favour of maintaining sanctions. But

Bernt Bernander (right) and Prince Sadruddin Aga Khan (left) are briefed by UNICEF water engineer Raymond Naimy.

this is poor consolation to a mother whose child is starving.

And is it not possible that the hoped for successor to Saddam Hussein would have the same ambitions for national aggrandizement and prestige? And what guarantee do we have that new political leadership would put the country on a democratic course?

So the political aim, at best, is shaky, and the outcome uncertain. Put differently, it does not have sufficient weight to take precedence over human suffering, or the possibility that innocent people will die.

Prince Sadruddin has sounded the alarm. Worse things can befall the people of Iraq than being strapped with bad government. But public opinion in the West is obsessively focused on Saddam Hussein's staying power. Is it only images of emaciated mothers and dying children flashed across a television screen that can trigger public compassion and move politicians?

Once more, our priorities are confused. In the wake of victory in the Gulf, the urge for retribution has outweighed the nascent hope of a more humane world order. We should not forget that the cardinal objective of social and political organization is to enhance the welfare of people. This applies as much to international as to national polity. It should not take second place to whether Saddam Hussein, like the proverbial cat, has nine lives. His political survival can very well be put on the back burner. ■

"Speaking Out" is open to readers who wish to offer clear, well-supported positions on development issues. Contributions do not necessarily reflect the views of UNDP.

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*Swedish citizen **Bernt Bernander** is the Baghdad-based coordinator of the United Nations Humanitarian Programme for Iraq. Mr. Bernander has worked with the UN since 1962, first in the Congo and then as a political affairs officer in Cyprus. He joined UNDP in 1966, as deputy and resident representative in Indonesia, Zaire and Ethiopia, and then as executive agent of the Mekong Secretariat in Bangkok. Until January 1991, Mr. Bernander was assistant administrator in charge of UNDP's Office for Project Services.*

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